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THE

DEVELOPMENT OF CANCER

FROM

NON-MALIGNANT DISEASES.

BY

DANIEL LEWIS, M. D.,

ASSISTANT PHYSICIAN TO THE NEW YORK SKIN AND CANCER HOSPITAL.

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THE DEVELOPMENT OF CANCER FROM NON-MALIGNANT DISEASES.*

THE frequency with which patients attribute cancer to some non-malignant disease or condition as the exciting, if not the primary cause, is familiar to every observer of such cases.

Medical literature abounds in isolated instances of such development, and my purpose is to so group them as to form reliable premises for deductions concerning the origin of cancer.

Warty growths should be named near the head of the list, on account of the frequency with which they have been observed to become cancerous. In a paper published in the "American Practitioner" for December, 1874, I gave a brief report of a case (No. I) occurring in a man, fifty-five years of age, who had a small wart on the right side of the nose, about three quarters of an inch from the angle of the eye, which had existed many years, without showing any sign of malignancy. Two years before its removal it became slightly ulcerated, without any known cause, and from that time forward it increased gradually in size until at the

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end of the two years it was an unmistakable epithelioma. The cervical glands were considerably enlarged. It was removed by Marsden's arsenical mucilage, and healed completely; but the patient died two years later of cancer of the left lung.

Dr. Thin relates a case, in the "Transactions of the London Pathological Society," vol. xxx, p. 374, of rodent ulcer, which began, four years before its final removal by operation, as a little wart by the side of the nose, the lip of that side being at the same time swollen, on account of inflammation of the eye-tooth.

It increased in size very slowly, and three years after its commencement caustic was applied, which seemed to improve it at first; but it soon began to increase rapidly, and when removed, twelve months later, it was an ulcer one half-inch by an inch.

Microscopical examination of sections through the border and surface of the ulcer exhibited the usual cell arrangement of rodent ulcer.

In both of these cases there is no history of heredity, and in my own case the history is authentic for at least two generations.

The same process is noticed in the development of cancer from warts which usually marks epithelioma of the lip —viz., the formation and removal of a scab upon its surface, and the gradual development of the sore.

Sebaceous tumors often result in cancer after they have existed for long periods without showing any malignant tendency. Sometimes, when middle life is reached and the tendency to degenerative changes is at its maximum, these growths will begin to show signs of activity; some tenderness and pain, less mobility, and a thickening of the walls near the base of the tumor, are often among the first changes noted. Ulceration follows later, and the course of the dis-

ease thenceforth does not differ from that of cancer from other causes.

Injuries play an important part in other cases ; and the following case, occurring in the practice of Dr. W. W. Crandall, of Andover, will furnish an excellent illustration :

A man, aged fifty-five, with a wen on the vertex, one inch and a half in its longest diameter, which had existed for a score of years or more, accidentally struck it against a sharp piece of wood, which, if I remember rightly, caused slight bleeding. Inflammation of the tumor followed, then ulceration and sloughing, which was followed, after a few weeks, by cancerous disease of the entire border and even base of the ulcer. It was finally removed by Marsden's method, and the history was published in the paper above mentioned. There was no family history of cancer.

Mr. C. Aston Key has reported a case of sebaceous tumor of the scalp ("Trans. London Path. Soc.," vol. i, p. 345) which he removed from the scalp of a lady sixty-nine years of age. The top of the tumor had sloughed, the margin of the opening assumed a cancerous character, and, after the whole tumor was removed, a quantity of glairy fluid was found at its lower portion, having all the physical appearance of colloid. Family history not mentioned.

Numerous instances are recorded in which the ordinary mole became the seat of cancerous disease.

Mr. H. Thompson reported the following case at a meeting of the London Pathological Society, November 6, 1860 :

A lady, aged sixty, was subject from birth to a small black mole on the outer side of the left arm.

It became irritated in hot weather for two summers, the second time remaining red and swollen, and a melanoid cancer of the size of a large nut resulted, which was attended with a large glandular tumor in the axilla of the same side.

It seems that the melanoid variety of cancer chooses the neighborhood of a congenital mole, or wart, for its development, as in the instance just related.

Mr. Pemberton, of the Birmingham General Hospital, in his work on cancer, emphasizes this point, and one of his cases is so characteristic that I will give it as he relates it :

Mrs. M. H., aged forty-five, had several congenital moles on different parts of the body, one of which was near the middle of the forearm.

Ulceration began around its edge first, and spread therefrom, leaving the mole untouched. At the end of four years, an irregular ulcer, two inches in its longest diameter, was produced, with borders elevated, dark-colored, and indurated.

The entire portion was removed by operation down to the muscles beneath, and, four years later, she remained well. There were no enlarged glands, and no history of cancer in the family.

Other varieties of cancer than the melanoid often develop in moles, however, and the same author (Pemberton) relates several cases where an irritation or slight injury of a congenital mole was followed by the encephaloid variety.

Syphilis is often the direct cause of cancer, especially when the disease appears as a chronic ulcer of the tongue. The extreme difficulty of curing these syphilitic sores by the ordinary treatment is doubtless familiar to every practitioner.

I have recently seen a syphilitic patient, who had been under treatment in hospital for several months with ulceration of the tongue, develop an affection of the parotid and sublingual glands of the same side, which was undoubtedly malignant.

Walsh ("The Nature and Treatment of Cancer," p. 155)

does not admit that syphilis is a cause of cancer, and bring forward arguments against it, the chief one being that it is a rare disease among prostitutes, in whom syphilis is presumably quite common. This argument loses its force when the age of that class is considered, the average of which is much below that at which cancer most frequently occurs.

Scirrhus of the penis has been observed to spring from a syphilitic sore, and even Walsh says (p. 408): "Venereal ulcers may become complicated by carcinomatous deposition and fungate in the same manner as primary cancer." The same authority also declares that venereal warts may terminate in cancer.

It may not be out of place to mention here that cancer of the penis has been so frequently observed associated with congenital phimosis that many writers have placed it among the causes of the disease, and the retention of the natural secretions is believed to be the exciting cause. Ten patients out of twelve, treated for cancer of the penis by Hey, had either congenital or acquired phimosis.

The development of cancer of the breast, when a chronic eczema of the nipple had existed for a long time, has naturally led to the inference that they stood in the relation of cause and effect.

Mr. Henry Morris, of the Middlesex Hospital, reported two cases in the "Med.-Chirurg. Transactions" (vol. lxiii, p 37), in one of which cases the eruption existed four years, and in the other six, before cancer was suspected. Both patients died of secondary cancer.

Mr. Thomas W. Nunn, in his recent admirable work on "Cancer of the Breast," refers to Mr. Morris's cases in connection with one observed by himself, and also furnishes the conclusions arrived at by Mr. H. T. Butlin, in a paper on the same subject.

I take the liberty of copying Mr. Butlin's propositions as Mr. Nunn gives them :

1. That a certain relation existed between the eczema of the nipple and the areola and the carcinoma of the breast.
2. That one of the first effects of the eczema was to produce proliferation of the mucous layer of the epidermis of the parts affected.
3. That in time the epithelium lining the galactophorous ducts became affected in like manner.
4. That the disease, traveling along the large ducts, reached the smaller ducts and acini, which became dilated and filled with proliferating epithelium, which was at length, so to speak, discharged into the surrounding tissues.
5. That the carcinoma thus formed was therefore essentially a disease of epithelium.

Whether we accept this theory of production, or the opposing one of Dr. Thin—that, instead of a cell proliferation, the growth is the result of a special development of colorless blood corpuscles—the fact that cancer of the breast does result from eczema of the nipple and areola seems to be pretty well established.

The development of cancer in cicatrices of various kinds, especially burns, is too well recognized to need any comment.

Simple ulcers occasionally become malignant, and two very interesting cases of that kind are at present under treatment at the New York Skin and Cancer Hospital, in the service of Dr. Bulkley.

The first is that of a woman, aged fifty-five, who fell down a flight of stairs six years ago, receiving several cuts about the face by corners of zinc covering the steps. All healed except one on the right ala nasi, which continued to discharge a little watery fluid, and occasionally form a scab over it, until within the past year and a half, when it began

to increase in size quite rapidly, and now is nearly two square inches in extent, and an unmistakable epithelioma. A second one has recently developed just below the left eye, and entirely distinct from the first ulcer. The patient is positive in her statement that no cancer has ever occurred in her family.

The second case is in a man, fifty-seven years of age, who received an abrasion of the skin on the left leg thirty years ago, which healed in a few weeks. Ever since that time, however, he has often had severe itching on the site of the injury, and scratching it has abraded the skin, and quite a large ulcer has often been the result. It has not been healed for about six years; and during an attack of acute rheumatism, two years since, it began to increase in size, and, notwithstanding all the remedies applicable to such cases have been employed for its cure, it has steadily advanced.

It is now a deep, irregular ulcer, extending from the ankle nine inches up the leg, its lateral diameter being about seven inches.

The surface is covered with irregular nodules and furrows, color dark red, and secreting a considerable watery fluid. The edges are elevated and indurated for nearly an inch from the border, and, when compressed firmly, exude a little fluid resembling pus. The entire ulcer is the seat of an almost constant burning pain, described by the patient like the sensation of having boiling water poured over it.

The man has been a coachman for thirty years, and was never sick. Even now his general appearance indicates good health. There is a bare possibility of heredity, as one brother died from some "sore" a few years ago.

An authentic case of cancer developed from an innocent ulcer is reported by Mr. Jonathan Hutchinson in the

"Transactions of the London Pathological Society" (vol. viii, p. 404).

The patient was a woman, aged sixty, who had suffered from onychia of the right great toe for about eight months. It was said to have been caused by a tight shoe. When the remnants of dead nail were removed, the matrix and adjacent parts were in an inflamed and very irritable state, and resisted all efforts to heal them. The base of the ulcer became gradually thicker and more swollen, and, syphilis being suspected, iodide of potassium was administered, but without benefit.

Induration increased and pain became more severe, and of a darting, pricking character.

Enlarged glands were then discovered about the middle of the thigh, just over the large vessels where Mr. Hutchinson has several times observed the first glandular enlargement in melanosis of the foot. The glands of the groin were not affected. The toe was removed, and found to be the seat of melanotic and medullary cancer.

At that time the woman had not materially lost flesh, and was in good health, although the trouble had existed two years. Eight months later she returned with a bleeding mass of cancer in the groin, and also recurrent disease in the stump of the toe. In this case also there was no history of hereditary cancer.

Numerous cases similar to those here presented are recorded, but enough have been cited, I believe, to establish beyond question that cancer is not always the outgrowth of malignancy. In other words, in the cases here recorded there was a pre-cancerous stage, when the patient could have been cured by removing a simple sebaceous tumor or a wart — by a judicious management of an eczema of the nipple, or a lacerated wound of the face.

The importance of these practical considerations is ap-

parent, but the chief interest of these cases, to my mind, lies in the evidence they furnish that the doctrine advanced by Mr. Hutchinson of a pre-cancerous stage in all cancer is correct.

In a paper on the "Origin of Tumors," which he presented at the last meeting of the British Medical Association, he traces similarities between inflammation and cancer, and finally asserts that the former, by inducing a local sensibility of the part, may be classed among the predisposing causes of malignant disease.

The cases that I have here collected will show that the disease was invariably preceded by a local irritation, in some instances lasting many years; that some exciting cause produced an acute inflammation, and cancer was the result.

While the pre-cancerous stage is often so well marked as to be undeniable, it seems fair to assume that it may exist in *every* case, but, when the disease is very active, is sometimes submerged, as it were, before it is clearly recognized.

One other point deserves mention here, which is the fact that there is not a clear history of inheritance among all these cases. You will find this apparent in most of the statistics which have hitherto been published. The records of the London Cancer Hospital, as shown me through the courtesy of Dr. Marsden, are overwhelmingly against the so-called constitutional origin of cancer. Although Mr. Paget claims that the statements of patients regarding this point are not to be depended upon on this side of the argument, it is very difficult to understand why he so readily accepts the same kind of evidence when a patient declares that some near or remote relation did have a cancer.

The following propositions, based upon the clinical history of cancer, seem to be well sustained :

1. Many diseases of a non-malignant character are not only predisposing but exciting causes of cancer.
2. Such degeneration often occurs in patients who have no hereditary predisposition to cancer, and in those who are so predisposed the danger is imminent.
3. The recognition of the pre-cancerous stage of the disease is of the highest importance in its successful treatment.
4. While it is true that heredity is well attested in many cases, its importance has been greatly overestimated by all the older authorities and many writers of the present day.

147 EAST FORTY-FIFTH STREET, NEW YORK.

